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TITLE: Block copolymer hot melt adhesive compositions

BSPR:

The block copolymer of the adhesive compositions of the present invention is selected from the group consisting of copolyesters, copolyamides, copoly(ester-amides) and copoly(ether-esters) melting at a temperature of at least about 150.degree. C., having hard segments and soft segments to provide a balance of physical properties and processability. These are considered to exist in microscopic domains within the bulk mass of copolymer resin to provide a heterophase system in which the copolymer will have physical properties reflecting the properties which the respective segments would manifest independently. By control of the relative size, proportions, crystallinity and crystal melting points of the segments, the tack, open time and bond strength of the adhesive can be controlled. The hard segments contribute crystalline blocks to the copolymer so that optimum bulk physical properties such as tensile strength and stiffness can be achieved without incurring the disadvantage of high processing viscosity.

DEPR:

A block copoly(ether-ester) of inherent viscosity about 0.6 containing 65 weight percent of polybutylene terephthalate as the hard segments and 35 weight percent of the copolyisophthalate-terephthalate (I:T, 80:20) of polytetramethylene ether glycol (having a number average molecular weight about 600) as the soft segments, is melt blended with aluminum powder and glass fiber as described in Example 1. The blend is used as a hot melt to fill dents and orifices in a metal plate.

CLPR:

2. The adhesive composition of claim 1 wherein the hard segments of the block copolymer are polyester condensates of an aliphatic or alicyclic diol having from 2 to 10 carbon atoms and an alicyclic or aromatic dicarboxylic acid having from 8 to 20 carbon atoms, or polyamide condensates of an aliphatic or alicyclic diamine having from 2 to 12 carbon atoms and an aliphatic or alicyclic dicarboxylic acid having from 2 to 12 carbon atoms, or polyamide condensates of an .omega.-aminocarboxylic acid having from 2 to 12 carbon atoms; and wherein the soft segments of the block copolymer are polyester condensates of an aliphatic or alicyclic diol having from 4 to 10 carbon atoms or a polylactone diol of molecular

weight in the range of about 350 to 6000 and an aliphatic, alicyclic or aromatic dicarboxylic acid having from 4 to 54 carbon atoms, or poly(~~ether-ester~~) condensates of a poly(alkylene ether) glycol of molecular weight in the range of about 350 to about 6000 in which the alkylene groups have from 2 to 10 carbon atoms and an aliphatic, alicyclic or aromatic dicarboxylic acid having from 4 to 54 carbon atoms, or polyamide condensates of an aliphatic or alicyclic diamine having from 2 to 12 carbon atoms and a mixture of an aliphatic or alicyclic dicarboxylic acid having from 4 to 54 carbon atoms containing at least 40 weight percent of an aliphatic dicarboxylic acid having from 18 to 54 carbon atoms.